MR. K. SIVARAMA PANIKKAR (*Shertallai*) : Does he expect respectability from a cooly attender who is paid only Rs. 8?

MR. R. KRISHNASWAMI AIYAR (*Ag. Director of Public Instruction*): That is a matter of opinion.

DEPUTY PRESIDENT: I will now put the demand under education part by part. The first item, that is, part (*a*) is Rs. 8 required on account of the pay, for one month, of one female attender in the College of Science. May I take it that the House accepts the demand?

The grant was made.

DEPUTY PRESIDENT: The next item is Rs. 1,750 required for the institution of Philosophy Chair in the College of Arts. I take it that the House accepts the demand.

The grant was made.

DEPUTY PRESIDENT: The next item is Rs. 5,757 required for purchase of furniture and an iron safe for the use of the new College Hostel. I take it the House sanctions the amount.

The grant was made.

DEPUTY PRESIDENT: The next item is Rs. 1,527, being the amount required for payment of rent for 1101 for the building in which the Caste Hindu Hostel is now housed. I take it that the House accepts the demand.

The grant was made.

DEPUTY PRESIDENT: Lastly, there is the item of Rs. 39,000 required for payment of grants-in-aid to Vernacular Schools for Boys and stipends to teachers under training. May I take it that the House sanctions this amount also?

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): I object.

The motion was put to the vote and carried.

The grant was made.

DEMAND XIII.—AGRICULTURE AND FISHERIES.

DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*): I beg to move for a grant not exceeding Rs. 870 under Demand XIII, Agriculture and Fisheries, on account of the pay of the Economic Botanist and his staff for five months commencing from the 1st Kumbham last. The pay of the Economic Botanist is Rs. 150 a month, and he has a staff consisting of an attendant on Rs. 15 and a peon on Rs. 9, so that the amount required for a month is Rs. 174, and the total required for 5 months from Kumbhom onwards is Rs. 870. The Economic Botanist was appointed tentatively for 2 years from the beginning of Tulam 1099. This period should have expired by the end of Kanni 1101, but when the budget for the current year was sanctioned towards the end of last year, the period was extended by four months, so that the tentative period actully expired by the end of Makaram last. When the budget for the current year was under consideration, the Economic Botanist had hardly

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completed two years, and Government thought that he should be allowed to complete the full period of two years before he was called upon to render an account of his work.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): Pray what is his function ?

DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*): I shall come to that presently. After the completion of two years, he submitted a report of his work from which Government were able to decide on the continuance of his appointment, and hence Government are now coming to this Council for this supplementary grant of Rs. 870.

I shall now answer Mr. P. K. Narayana Pillai. I was going to speak about the point he raised even without his interpellation. The Economic Botanist has two main functions. The first is tc try and improve crops by selection and hybridization. Secondly, he has to find out economic uses for plants which are not put to any use at present. Both these are very slow processes, particularly the first, *viz.*, the improvement of crops.

MR. M. SIVATANU PILLAI (*Tovala*) : May I know whether the Member can speak in technical language ?

DEPUTY PRESIDENT : Will you please explain to him ?

DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*) : Hybridization means cross-pollination (*laughter*), that is, crossing of two different varieties of crops. Improvement of crops requires a careful study of the characteristics of the existing varieties. It will take several years before one could decide upon the method to be followed in improving seeds by selection and crossing. At Pusa, where there is a very efficient agricultural institute, two eminent Botanists had to work for several years before they could produce a variety of wheat which yielded 25 per cent. more than the ordinary varieties. They met with failures at the beginning. But after years of hard and patient labour they succeeded in the end in producing a new variety of seed which proved to be a better yielder than the old ones. Similarly, in Madras, Central Provinces and various other places, the Economic Botanist worked on cotton and produced new varieties of cotton seeds which were found to be better yielders than the old ones. Our Economic Botanist, as I said, has been at work for a little over two years and I must admit that he has not been able to produce any new variety of crops so far ; but it must be remembered that nowhere have Economic Botanists been able to produce any new variety of crop within such a short period as two years. They had to work for several years and had to meet with failures in the beginning, and, in the end, they succeeded in producing new strains which were decidedly an improvement on the old varieties.

MR. A. K. PILLAI (*Karunagapalli*) : May I know from the learned Doctor whether the Government are aware of the fact that the period of two years was not sufficient even when they appointed the Economic Botanist ?

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DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*): Government wanted to see whether the work turned out by the Economic Botanist in two years would justify the continuance of his appointment.

MR. A. K. PILLAI (*Karunagapalli*): What was the state of cross pollination in the country before his appointment?

DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*): Nothing was done in this line.

MR. A. K. PILLAI (*Karunagapalli*): Was any cross pollination going on? (*Laughter.*)

DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*): Not by artificial means. I shall just explain what he did during these two years. He studied the characteristics of the different varieties of some crops like paddy, cocoanut, tapioca and pepper. He found out, for instance, in the case of tapioca which is ordinarily propagated by vegetative process, that is by planting simple cuttings, that seedlings could be raised and crossed to produce a better variety. He also found out that the development of tapioca depended upon soil aeration. He investigated the very important question of dropping of young nuts by the cocoanut palm and various other things connected with the cocoanut. Further, he studied different varieties of pepper and found out that there is a particular variety which yields throughout the year. If that variety could be cultivated throughout the country, it would increase the production of pepper in the country. Also, he investigated the ordinary weeds in the country. I think our friends from the eastern parts of Travancore know what is known as *maram*, a kind of weed which grows in the hilly tracts. When it appears in the paddy-field, all the paddy plants in its neighbourhood die. It is a kind of parasite living on the roots of the paddy plant. He is now engaged in conducting field experiments to find out a practical method of destroying this dangerous weed. He also investigated the fibre resources of the country. We have any number of fibre yielding plants growing wild in the country. Some yield smooth fibres, and you can even weave coating and shirting cloth out of them. There are other fibres which are coarse and which could be used for making tooth brushes, hair brushes, boot brushes and other brushes. He has made some of these articles and it is hoped that he will be able to introduce brush-making as a cottage industry in Travancore. I know that this has been done in Ceylon. Though these articles may not have the same finish as the imported articles, still, as regards durability and price, they compare very favourably. If brush-making could be developed as a cottage industry, we can make brushes at least for home consumption even if we do not export them.

MR. A. K. PILLAI (*Karunagapalli*): May I know whether there is any corresponding post in the Industrial Department?

DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*): do not think there is.

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MR. A. K. PILLAI (*Karunagapalli*): Does not Dr. Kunjan Pillai think that this is more properly a work for the Department of Industries?

DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*): The finishing portion of it probably comes under the Department of Industries. But the investigation of the plants and the nature of fibres they yield, I believe, comes under agriculture. When once a particular fibre is found out and investigated, the making of the brush may be handed over to the Department of Industries. Anyhow, we are now at the initial stage only. Therefore, it is too early to consider whether the work belongs to the Department of Agriculture or of Industries. During these two years the Economic Botanist made these preliminary investigations and found out that some wild plants could be put to proper use. He could not be expected to do more than that during this period. I may say from what I have seen of his work that it is one which will lead to results of practical value, if only he is allowed to continue it. I hope, therefore, that this House will see its way to vote this small amount of Rs. 870 for the continuance of his post.

MR. T. J. MATTHEW (*Changanachery* cum *Peermade*): May I know whether the sanction of this House is necessary for the pay of the officer concerned?

DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*): The supplementary demand in respect of the staff of the Botanist has to be voted by the Council. The pay of the officer is not votable.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): Would he give us an approximate idea of the period for which the Economic Botanist will be necessary?

DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*): I can't say that now.

DEPUTY PRESIDENT: I think you will do well to modify this motion into one for the grant of Rs. 120, because the pay of the officer is non-votable.

MR. T. J. MATTHEW (*Changanachery* cum *Peermade*): Then practically the amount to be voted is Rs. 120 only.

DR. N. KUNJAN PILLAI (*Director of Agriculture and Fisheries*): Yes. I require only Rs. 120.

MR. K. C. MAMMEN MAPPILLAI (*Commerce and Industry, North*): Sir, if the figures really give us an idea of the actual state of things, I think the work turned out by the Economic Botanist of the British Government has been marvellous. Dr. Kunjan Pillai referred to the evolution of a particular variety of wheat by Mrs. Howard. Most of us have been reading about the increase of the sum total of the productivity of wheat in British India. After that, it has been popularised. Similarly, we have been hearing of other wonders brought about by Dr. Barber and various other persons engaged in this hybridization, cross pollination, etc. In our country, especially in the field of paddy cultivation there is a great deal to be done in this direction. I hope

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[Mr. K. C. Mamman Mappillai.]

Dr. Kunjan Pillai and his assistant will concentrate their attention upon that matter. For instance, we have got a very heavy yield such as *Adhikrali* and *Kochu vithu* and heavy yielders and others which want a long time. If the properties of both these can be combined, it will be a source of great benefit to the cultivators in the *punja* areas of the country. I need not suggest other possibilities. I am sure, that Dr. Kunjan Pillai will be devoting his attention to them. For example, there are some varieties of cocoanuts which yield in the third or fourth year of planting. But the nuts are poor economically and useless. On the other hand, there are other varieties which require ten or fifteen years to yield. At the same time, they give very good crops. If the properties of these two can be combined, we can get a variety of seeds which could bring forth fruits within four or five years and at the same time could be economically useful. I think that would be very valuable to the country. I need not refer to the other possibilities as I know Dr. Kunjan Pillai himself is aware of them. I have very great pleasure in supporting the motion.

MR. P. K. NARAYANA PILLAI (*Ambalapuzha*): Sir, I also wish to support Dr. Kunjan Pillai, after all. At first, I had my own doubts about the work of the Economic Botanist whose name suggested that he is economising by cutting short botany itself and I thought I would be at cross purposes with Dr. Kunjan Pillai. When Dr. Kunjan Pillai said this gentleman is at cross-pollination I thought I would lay down all opposition and support my friend. Further, I notice that the Economic Botanist is engaged in the propagation of hybrids which bid fair to come into some importance in the economic development of our country, a prospect which we have all good reason to welcome. I think we cannot have any possible objection to the continuance of such good work. Therefore, I have great pleasure in supporting this motion.

MR. A. K. PILLAI (*Karunagapalli*): Sir, I wish to support this demand, and, in doing so, I want to draw the attention of the Director to the necessity of divesting the Economic Botanist of the cross-pollination business and asking him to interest himself in the more useful work of finding out economic values of herbs and plants in Travancore. Sir, the resources of Travancore in this direction are infinite. The potentialities of agricultural industry are very great and many plants are there which are absolutely left undiscovered. I was able to find at the office of the Director of Agriculture ever so many samples of the work that has been turned out by the Economic Botanist and I could not at first believe that these were products of Travancore. There were ever so many kinds of brushes. They were simply excellent; they could command a good value in the English market. I was only sorry that he was not given sufficient encouragement. If his business is to find new uses for these undiscovered plants, he would be doing sufficient return for the remuneration given him. I would therefore draw the attention of the Director of Agriculture to the latter part of the suggestion that I have made here.

The demand for Rs. 120 was then put and carried.

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